Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An end effector assembly comprising:

a cutting head adapted to receive an orifice at an orifice location for generating a high-pressure fluid jet, and having a mixing tube coupled to the cutting head downstream of the orifice location;

a motion assembly coupled to the cutting head via a clamp positioned around the cutting head, the motion assembly being configured to be coupled to a bridge for motion parallel to a longitudinal axis of the bridge, the motion assembly further comprising a gimbal wrist provided with a first motor having a first axis of rotation and with a second motor having a second axis of rotation, the first and second axes of rotation being perpendicular to each other but neither parallel nor perpendicular to the longitudinal axis of the bridge when the motion assembly is coupled thereto; and ~~downstream of the orifice location; and~~

~~wherein~~ a raised member ~~is~~ provided on one of an outer surface of the cutting head and ~~the~~ an inner surface of the clamp and a recess ~~is~~ provided on the other of the outer surface of the cutting head and the inner surface of the clamp, the raised member mating with the recess in a weight-bearing manner to vertically position and support the cutting head.

2. (Cancelled)

3. (Previously Presented) The end effector assembly according to claim 1 wherein the clamp has a quick-release mechanism allowing a portion of the clamp to be easily moved away from the cutting head.

4. (Previously Presented) The end effector assembly according to claim 1, further comprising a nozzle body assembly removably coupled to the cutting head, the clamp

holding the cutting head when the nozzle body assembly is separated from the cutting head, thereby allowing access to the orifice location without removing the cutting head from the clamp.

5. (Previously Presented) The end effector assembly according to claim 1 wherein the clamp is provided with a triangularly arranged alignment member to position the cutting head in a desired location.

6. (Original) The end effector assembly according to claim 5 wherein the triangularly arranged alignment member comprises pins that protrude inwardly from the inner surface of the clamp.

7. (Previously Presented) The end effector assembly according to claim 4 wherein the clamp further comprises an upper guide coupled to the nozzle body assembly, the upper guide vertically supporting the nozzle body assembly when the cutting head is removed from the clamp.

8. (Previously Presented) The end effector assembly according to claim 1 wherein a position sensor is coupled to the clamp adjacent the cutting head.

9. (Previously Presented) The end effector assembly according to claim 1, further comprising a shield coupled to an end region of the cutting head, the shield surrounding an end region of the mixing tube and being made of a flexible material.

10. (Cancelled)

11. (Previously Presented) The end effector assembly according to claim 1, further comprising a high-pressure fluid assembly coupled to the cutting head, the high-pressure fluid assembly having a swivel through which high-pressure tubing passes to deliver high-

pressure fluid to the cutting head, the swivel allowing the high-pressure tubing to follow motion imparted by the motion assembly to the cutting head.

12. (Cancelled)

13. (Currently Amended) An end effector assembly comprising:

a cutting head having a body adapted to receive an orifice at an orifice location for generating a high-pressure fluid jet, and having a mixing tube coupled to the body of the cutting head downstream of the orifice location;

a motion assembly coupled to the cutting head via a clamp positioned around the body of the cutting head, the motion assembly being configured to be coupled to a bridge for motion along a longitudinal axis of the bridge, the motion assembly further comprising a gimbal wrist provided with a first motor having a first axis of rotation and with a second motor having a second axis of rotation, the first and second axes of rotation being perpendicular to each other but neither parallel nor perpendicular to the longitudinal axis of the bridge when the motion assembly is coupled thereto; and

a nozzle body assembly removably coupled to the cutting head, the clamp holding the cutting head when the nozzle body assembly is separated from the cutting head, thereby allowing access to the orifice location without removing the cutting head from the clamp.

14. (Previously Presented) The end effector assembly according to claim 13 wherein the clamp has a quick-release mechanism allowing a portion of the clamp to be easily moved away from the body of the cutting head.

15. (Previously Presented) The end effector assembly according to claim 13 wherein the clamp is provided with a triangularly arranged alignment member to position the cutting head in a predefined location.

16. (Original) The end effector assembly according to claim 15 wherein the triangularly arranged alignment member comprises pins that protrude inwardly from the inner surface of the clamp.

17. (Previously Presented) The end effector assembly according to claim 15 wherein the inner surface of the clamp is configured to contact an outer surface of the cutting head at three locations around the circumference of the cutting head, such that the inner surface of the clamp forms the triangularly arranged alignment member.

18. (Previously Presented) The end effector assembly according to claim 13 wherein the clamp further comprises an upper guide coupled to the nozzle body assembly, the upper guide vertically supporting the nozzle body assembly when the cutting head is removed from the clamp.

19. (Previously Presented) The end effector assembly according to claim 13 wherein a position sensor is coupled to the clamp adjacent the cutting head.

20. (Original) The end effector assembly according to claim 19 wherein the position sensor is provided with a tip that is angled toward an end of the mixing tube, an end region of the tip being adjacent the end of the mixing tube.

21. (Previously Presented) The end effector assembly according to claim 13, further comprising a shield coupled to an end region of the cutting head, the shield surrounding an end region of the mixing tube and being made of a flexible material.

22. (Previously Presented) The end effector assembly according to claim 21 wherein the shield is provided with a flange that matingly engages a groove provided in the end region of the cutting head.

23. (Cancelled)

24. (Original) The end effector according to claim 21 wherein a disk of hard material is positioned in an upper, inner region of the shield.

25. (Cancelled)

26. (Previously Presented) The end effector assembly according to claim 13, further comprising a high-pressure fluid assembly coupled to the cutting head, the high-pressure fluid assembly having a swivel through which high-pressure tubing passes to deliver high-pressure fluid to the cutting head, the swivel allowing the high-pressure tubing to follow motion imparted by the motion assembly to the cutting head.

27. (Previously Presented) The end effector assembly according to claim 26 wherein the swivel is coupled to a valve having a diameter that is no more than 4.0 inches.

28. (Previously Presented) The end effector assembly according to claim 13 wherein the clamp is positioned around the body of the cutting head downstream of the orifice location.

29. (Currently Amended) An end effector assembly comprising:

a cutting head having a body adapted to receive an orifice at an orifice location for generating a high-pressure fluid jet, and having a mixing tube coupled to the body of the cutting head downstream of the orifice location; and

a motion assembly coupled to the cutting head via a clamp positioned around the body of the cutting head downstream of the orifice location, the clamp having a quick-release mechanism to allow a portion of the clamp to be easily moved away from the body of the cutting head, the motion assembly being configured to be coupled to a bridge for motion along a longitudinal axis of the bridge, the motion assembly further comprising a gimbal wrist provided

with a first motor having a first axis of rotation and with a second motor having a second axis of rotation, the first and second axes of rotation being perpendicular to each other but neither parallel nor perpendicular to the longitudinal axis of the bridge when the motion assembly is coupled thereto.

30. (Previously Presented) The end effector assembly according to claim 29, further comprising a nozzle body assembly removably coupled to the cutting head, the clamp holding the cutting head when the nozzle body assembly is separated from the cutting head, thereby allowing access to the orifice location without removing the cutting head from the clamp.

31. (Previously Presented) The end effector assembly according to claim 29 wherein the clamp is provided with a triangularly arranged alignment member to position the cutting head in a predefined location.

32. (Previously Presented) The end effector assembly according to claim 29 wherein the clamp further comprises an upper guide coupled to the nozzle body assembly, the upper guide vertically supporting the nozzle body assembly when the cutting head is removed from the clamp.

33. (Previously Presented) The end effector assembly according to claim 29 wherein a position sensor is coupled to the clamp adjacent the cutting head.

34. (Previously Presented) The end effector assembly according to claim 29, further comprising a shield coupled to an end region of the cutting head, the shield surrounding an end region of the mixing tube and being made of a flexible material.

35. (Cancelled)

36. (Previously Presented) The end effector assembly according to claim 29, further comprising a high-pressure fluid assembly coupled to the cutting head, the high-pressure fluid assembly having a swivel through which high-pressure tubing passes to deliver high-pressure fluid to the cutting head, the swivel allowing the high-pressure tubing to follow motion imparted by the motion assembly to the cutting head.

37. (Currently Amended) An end effector assembly comprising:

a cutting head having a body adapted to receive an orifice at an orifice location for generating a high-pressure fluid jet, and having a mixing tube coupled to the body of the cutting head downstream of the orifice location;

a motion assembly coupled to the cutting head via a clamp positioned around the body of the cutting head;

a nozzle body assembly removably coupled to the cutting head, the clamp holding the cutting head when the nozzle body assembly is separated from the cutting head, thereby allowing access to the orifice location without removing the cutting head from the clamp; and

~~a shield coupled to an end region of the cutting head, the shield surrounding an end region of the mixing tube; and~~

a high-pressure fluid assembly coupled to the cutting head, the high-pressure fluid assembly having a swivel operable to rotate about two axes and through which high-pressure tubing passes to deliver high-pressure fluid to the cutting head, the swivel allowing the high-pressure tubing to follow motion imparted by the motion assembly to the cutting head.

38. (Original) The end effector assembly according to claim 37 wherein the motion assembly further is configured to be coupled to a bridge for motion along a longitudinal axis of the bridge, the motion assembly further comprising a gimbal wrist provided with a first motor having a first axis of rotation and with a second motor having a second axis of rotation, the first and second axes of rotation being perpendicular to each other but neither parallel nor perpendicular to the longitudinal axis of the bridge when the motion assembly is coupled thereto.

39. (Currently Amended) An apparatus for generating and manipulating a fluid jet comprising:

an end effector assembly coupled to a ram for motion along a vertical axis, the ram being coupled to a bridge for motion along an axis that is parallel to a longitudinal axis of the bridge, the bridge being moveable in a direction perpendicular to its longitudinal axis, the end effector assembly further comprising a cutting head having a body adapted to receive an orifice at an orifice location for generating a high-pressure fluid jet, and having a mixing tube coupled to the body of the cutting head downstream of the orifice location; a motion assembly coupled to the cutting head via a clamp positioned around the body of the ~~cutting head;~~ cutting head, the motion assembly having a gimbal wrist provided with a first motor having a first axis of rotation and with a second motor having a second axis of rotation, the first and second axes of rotation being perpendicular to each other but neither parallel nor perpendicular to the longitudinal axis of the bridge. ~~and a nozzle body assembly removably coupled to the cutting head, the clamp holding the cutting head when the nozzle body assembly is separated from the cutting head, thereby allowing access to the orifice location without removing the cutting head from the clamp.~~

40. (Currently Amended) The apparatus according to claim 39, further comprising:

a shield coupled to an end region of the cutting head, the shield surrounding an end region of the mixing tube. ~~a high-pressure fluid assembly coupled to the cutting head, the high-pressure fluid assembly having a swivel through which high-pressure tubing passes to deliver high-pressure fluid to the cutting head, the swivel allowing the high-pressure tubing to follow motion imparted by the motion assembly to the cutting head.~~

41. (Currently Amended) The apparatus according to claim 39, further comprising:

a nozzle body assembly removably coupled to the cutting head, the clamp holding the cutting head when the nozzle body assembly is separated from the cutting head,

thereby allowing access to the orifice location without removing the cutting head from the clamp.~~wherein the motion assembly further comprises a gimbal wrist provided with a first motor having a first axis of rotation and with a second motor having a second axis of rotation, the first and second axes of rotation being perpendicular to each other but neither parallel nor perpendicular to the longitudinal axis of the bridge.~~

42. (Previously Presented) The apparatus according to claim 39 wherein the cutting head is coupled to a source of high-pressure fluid and to a source of abrasive.

43. (Currently Amended) ~~An~~ The apparatus ~~for generating and manipulating a fluid jet~~ according to claim 39, further comprising:

~~an end effector assembly coupled to~~ a two-dimensional manipulator coupled to an end of the end effector assembly. ~~, the end effector assembly being provided with a cutting head having a body adapted to receive an orifice at an orifice location for generating a high-pressure fluid jet, and having a mixing tube coupled to the body of the cutting head downstream of the orifice location;~~

~~a motion assembly coupled to the cutting head via a clamp positioned around the body of the cutting head; and~~

~~a nozzle body assembly removably coupled to the cutting head, the clamp holding the cutting head when the nozzle body assembly is separated from the cutting head, thereby allowing access to the orifice location without removing the cutting head from the clamp.~~

44.-62. (Cancelled)

63. (Previously Presented) An end effector assembly comprising:

a cutting head having a body adapted to receive an orifice at an orifice location for generating a high-pressure fluid jet, and having a mixing tube coupled to the body of the cutting head downstream of the orifice location; and

a motion assembly coupled to the cutting head via a clamp positioned around the body of the cutting head, the clamp having a quick-release mechanism to allow a portion of the clamp to be easily moved away from the body of the cutting head; wherein

the motion assembly is configured to be coupled to a bridge for motion along a longitudinal axis of the bridge, the motion assembly further comprising a gimbal wrist provided with a first motor having a first axis of rotation and with a second motor having a second axis of rotation, the first and second axes of rotation being perpendicular to each other but neither parallel nor perpendicular to the longitudinal axis of the bridge when the motion assembly is coupled thereto.

64. (New) An end effector assembly comprising:

a cutting head assembly having a body adapted to receive an orifice at an orifice location for generating a high-pressure fluid jet, and having a mixing tube coupled to the body of the cutting head assembly downstream of the orifice location;

a motion assembly coupled to the cutting head assembly via a clamp positioned around the body of the cutting head assembly;

a nozzle body assembly removably coupled to the cutting head assembly, the clamp holding the cutting head assembly when the nozzle body assembly is separated from the cutting head assembly, thereby allowing access to the orifice location without removing the cutting head assembly from the clamp; and

a position sensor coupled to the clamp adjacent the cutting head assembly, the position sensor being provided with a tip that is angled toward an end of the mixing tube, an end region of the tip being adjacent the end of the mixing tube.

65. (New) An apparatus for generating and manipulating a fluid jet comprising:

a cutting head having a body adapted to receive an orifice at an orifice location for generating a high-pressure fluid jet, and having a mixing tube coupled to the body of the cutting head downstream of the orifice location; and

a motion assembly coupled to the cutting head, the high-pressure fluid assembly being coupled to the cutting head to deliver high-pressure fluid to the cutting head, the swivel allowing the high-pressure tubing to follow motion imparted by the motion assembly to the cutting head.

66. (New) An end effector assembly comprising:

a cutting head having a body adapted to receive an orifice at an orifice location for generating a high-pressure fluid jet, and having a mixing tube coupled to the body of the cutting head downstream of the orifice location; and

a motion assembly coupled to the cutting head and configured to be coupled to a bridge for motion along a longitudinal axis of the bridge, the motion assembly further comprising a gimbal wrist provided with a first motor having a first axis of rotation and with a second motor having a second axis of rotation, the first and second axes of rotation being perpendicular to each other but neither parallel nor perpendicular to the longitudinal axis of the bridge when the motion assembly is coupled thereto.